OBSERVING POLLINATORS
Identify and count pollinators as they visit flowering plants.

Citizen Science Kit Building Guide

CHECK IT OUT!
CITIZEN SCIENCE
AT YOUR LIBRARY

This guide is designed to help you:

- Introduce **The Great Sunflower Project** to your staff and community.
- Build *Observing Pollinators* kits for library users to check out.
- Use and promote kits with turnkey marketing materials.
- Grow and sustain use of kits by connecting with communities and library network.

Table of Contents

Project Overview

Pollinators are animals that assist plants in their reproductive cycles and are critical to the world's food supply. In recent years their populations have suffered severe declines, especially among honey bee colonies. The Great Sunflower Project engages volunteers to help scientists understand and respond to changes in pollinator populations and the types of flowering plants that pollinators prefer from wherever they are.

Participants simply observe any flowering plant for less than 15 minutes, count and identify the pollinators that visit the plant, then log data online as instructed.

OBSERVING POLLINATORS
Identify and count pollinators as they visit flowering plants.

Kit Details

This kit includes components to purchase or download and print, including: **binoculars** to observe pollinators, a **data sheet** librarians should laminate along with a **clipboard** and **dry-erase marker** for participants to record observations from the field, a **stopwatch** to time observations, a **bee observer card**, a **guide to identify local flowering plants**, a **field journal** for participants to share tips and questions for the next kit user, a printable **Pollinator Coloring Page** to introduce aspiring citizen scientists to pollinators, and **Lemon Queen sunflower seeds** participants can plant to attract future pollinators to observe for continued engagement after the kit is returned to the library!

Library users who check out this kit will be directed to this public-facing web page to view related videos, access supplemental resources, and to log their citizen science data: https://scistarter.org/library-kits/observing-pollinators

Age Levels

Primarily for adults or children with help from an adult*. This kit provides an ideal family and multigenerational activity. With the help of an adult, children can begin learning about plants and pollinators around them. This kit and project can be demonstrated as part of a nature, food, gardening, tree, or pollinator program.

*Anyone allergic to bees, insects, poison ivy, etc, should use this kit with caution.

Funding Kits

Once you have an idea of what the kit components and related programming might cost, consider reaching out to your state library to inquire if they will provide grants to support your purchases and programs through the Grants to States program.

Building & Cataloging Kits

Before you begin assembling your kit(s) consider where they will be stored when not in circulation. Are there space limitations? Do kits need to be stackable? Another consideration is how the kits will be used in the field by the citizen scientists. Choose the box, bag, or pack that best fits the library and library user's needs.

Supply Lists

The following items are suggestions to build a kit that provides tools and resources to support this citizen science project. These items may become unavailable and require substitutions. Unless **"Do not substitute"** is noted for a specific tool due to the project's data collection

OBSERVING POLLINATORS
Identify and count pollinators as they visit flowering plants.

protocol, use your best judgment to find a comparable substitution. *This project is perfect for large group participation. Consider purchasing additional quantities of the supplies below to host a large group event.*

Order Date/Qty	Description	Cost *(Approx)*	URL
	Binoculars 10x25 Compact	$25	https://amzn.to/3hS3io7
	Stopwatch	$17	https://amzn.to/3rnvjqJ
	Clipboard 6" x 9" mini, 12 pack	$38 (~$3 per)	https://amzn.to/3eDughb
	Field Notebook, 3.5" x 5.5", 5 pack - Print and add labels to the outer and inner cover of the field notebooks. A PDF of the label can be found in the printed materials section below.	$7 (~$1 per)	https://amzn.to/3eEap1A
	Dry-erase marker, 4 pack	$5 (~$1.50 per)	https://amzn.to/3kbgrZu
	Local wildflower identification guide - See example for Arizona	$8	https://amzn.to/3wXzlHr
	Pollinator Book - Check out the booklist for relevant titles. You may choose to add one to the kit. See example.	$22	https://amzn.to/3hQt2Bb
	Sunflower seed packet *(optional)* - Suggested variety: Lemon Queen (Helianthus annuus). Order a supply that will replenish your kit after each check out. *If purchased through Renee's Garden, they will donate 25% of proceeds if you use the coupon code FR225A.*	$2.79 Approx. 40 seeds	https://bit.ly/3ezCJ56

OBSERVING POLLINATORS
Identify and count pollinators as they visit flowering plants.

	Suggested Storage Options - **Clear plastic box (4 liters)** - Provides easy stacking during storage. **Clear plastic totes** - Vendors may be able to offer the ability to brand totes.	$4 - $17	Clear Box: https://amzn.to/3BqL5FS Clear Tote: https://bit.ly/3rritrM

Print Materials

Print the resources below to promote citizen science and the Observing Pollinators kit at your library. We suggest laminating each item for longer use.

Printed	Description	URL
	Activity Guide - The Great Sunflower Project overview and direction.	English: https://bit.ly/3jdqjmj Spanish: https://bit.ly/3qGCJWg
	Data sheet - Master copy handy to quickly replenish kit supply or laminate reusable data sheets used with vis-a-vis marker and eraser.	Two half-page multiple count 5.5" x 8.5" data sheets - https://bit.ly/3wNkLCw One 8.5" x 11" data sheet - https://bit.ly/3ipQu7A
	Field Notebook Labels	English: https://bit.ly/3kmHbg9 Spanish: https://bit.ly/3HxWMwK
	Bee Observer cards - 68 cards, print double sided and spiral bind or laminate, punch a hole in one corner of the cards, and connect the cards with a binder ring.	https://bit.ly/3iyBvbq
	Pollinator Coloring Page - Introduce pollinators to young aspiring citizen scientists.	https://bit.ly/3fWDZA5

OBSERVING POLLINATORS
Identify and count pollinators as they visit flowering plants.

	"What is Pollination & What is a Pollinator?" Fact Sheet - From the North American Pollinator Protection Campaign	https://tinyurl.com/3kpxxjr5
	Pollinator Book List	https://bit.ly/3m6xm1T
	Outer Kit Label - Print and place on kit storage to help staff and library users identify kits. (Word download)	English: https://bit.ly/3ibgiW7 Spanish: https://bit.ly/3pTZbMw
	Borrowing Agreement (optional) - Editable checklist document to fit library needs for staff and customers during checkout/in process.	https://bit.ly/3Bqh49t

Questions about materials? Contact librarynetwork@scistarter.org.

Cataloging Kits

- **Add Barcodes** - add a barcode to the kit container, each component in the kit, the laminated Activity Guide, Checkout Card, and Waiting List Card. Ensure the barcode is visible on the storage container for easy identification,

- **Add Kit Labels** - provided above in the "Print Materials for the Kits" is a link to a 2x4" label template to easily identify kits by name on the storage container. Consider numbering multiple copies of the same kit, i.e., "Observing Pollinators Kit #1". If soft packs are used for storage, print the kit label (add library contact information), laminate, and attach like a luggage tag.

- **Add Security Tags** - Adhere Tattle-tape™ or a RFID tag to ensure kits don't leave the library without first being checked out.

- **Create a Bibliographic Record** - Many libraries use WorldCat as a guide to create a bibliographic record for your library's management system. Here is an example: https://www.worldcat.org/title/citizen-science-observing-pollinators/oclc/1226772464 &referer=brief_results.

Promoting & Circulating Kits

Promotional Materials

Print the resources below to promote citizen science and the Observing Pollinators kit at your library. We suggest laminating each item for longer use.

Printed	Description	URL
	Observing Pollinators Rack Cards - Place cards in a sign holder to promote awareness of the kit.	https://bit.ly/3zdd75U
	Observing Pollinators Check Out Card -Add barcode then place cards in sign holder for library users to take to the circulation desk to start the check out process.	https://bit.ly/3xTd13d
	Observing Pollinators Waiting List Card - Add barcode then place in sign holder for library users to take to the circulation desk for staff assistance with the hold request.	https://bit.ly/3iyCRTs
	Observing Pollinators Bookmark - Use in a variety of ways, such as in book displays, outreach events, and as event handouts. Consider adding them to the kits.	English: https://bit.ly/3hTSmq6 Spanish: https://bit.ly/3qO7zfF
	Observing Pollinators Flier - Display as a shelf talker, in related material areas in the library, at outreach events. Consider adding them to the kits.	https://bit.ly/3y2PigT
	Citizen Science at your Library Bookmark - Use in a variety of ways, such as in book displays, outreach events, and as event handouts.	https://bit.ly/2VZZlW9
	Check It Out Citizen Science at Your Library Posters - Display double sided posters (comes in two sizes) to put in a sign holder or for use in a display to let everyone know your library is a Hub for Citizen Science!	22x28" https://bit.ly/3jXQWL5 18x24" https://bit.ly/3lZpoHT
	Check It Out Citizen Science at Your Library Rack Card - Place cards in a sign holder to promote awareness of citizen science.	https://bit.ly/3CMkK62

OBSERVING POLLINATORS
Identify and count pollinators as they visit flowering plants.

	Optional Floor Display Stand * Use to display multiple rack cards, includes acrylic literature tray to offer flexible configuration to display the poster, check out cards, and promotional materials. Approx. $367.99		https://bit.ly/3izltyo

Circulating Kits

Typically, libraries make the kits available for two-week check out periods. When establishing the circulation process, consider the following:

- Will you download and use the provided Borrowing Agreement (https://bit.ly/3yRYJAx) or will staff check out kits like other library materials?
- For group events, consider creating an accessory kit with extra data sheets, binoculars, stopwatches, and Bee Observer cards.
- What is your policy regarding lost or damaged kit materials?
- Will you allow kit checkout renewals?
- What will be the process for checking kits back into the library?
- Who is the staff contact for kit questions, and maintaining/replenishing/replenishing kits?

Register Your Kit

Once kits are moved into circulation, be sure to register your library in the Global Citizen Science Kits and Tools Database on SciStarter so citizen scientists looking for the kits can find them at your library! Register your kit at https://www.SciStarter.org/tools.

Preparing & Supporting Library Staff

Help staff build confidence and knowledge of citizen science, the kits and related programs by using and promoting the following resources:

Host a Staff Meeting

Consider hosting quarterly staff meetings to review library procedures for kit storage, locating kits in library software, checking out/in process, and replenishing kit supplies process.

Promote Online Training Tutorials

Staff can complete a two-part, self-guided, online training tutorial developed by the National Library of Medicine, Arizona State University and SciStarter, designed to help increase knowledge and confidence in citizen science.

1. **Part 1: Foundations of Citizen Science -** Staff will be able to answer basic questions about citizen science, and related research projects (https://SciStarter.org/training).

2. **Part 2: Libraries as Community Hubs for Citizen Science** - Staff will be able to support the libraries as a community hub for citizen science including how to host programs, build kits and engage the community (https://www.SciStarter.org/library-training).

Upon completion of both parts, staff will earn **badges** and **professional development credits** from the Medical Library Association (limited time offer).

Read the Library and Community Guide to Citizen Science

This guide provides a general introduction to citizen science, explores ways libraries can catalyze and support citizen science engagement, highlights resources to find local citizen science projects, and provides tips to connect your existing programs and communities to projects on SciStarter.org (https://SciStarter.org/LibraryGuide).

Join the National Citizen and Community Science Library Network

Encourage staff to join the network to stay current on developments, learn about/share best practices, and to access additional resources (https://scistarter.org/library-network).

Partnerships & Events

Partnerships

Partnering with community-based organizations can provide access to new and underserved communities. Once you have identified possible community partners (Girl Scouts, 4-H, OSHER, NASA Night Sky Nightwork, etc), reach out and begin a dialogue to communicate shared expectations and co-create programs that meet the needs of your community.

See the Partnership section of https://SciStarter.org/library-training and the Library and Community Guide to Citizen Science, https://SciStarter.org/LibraryGuide, for partnership ideas.

Developed by Arizona State University and SciStarter with support from the Institute for Museum and Library Services, the Moore Foundation, and the National Library of Medicine.   **Last Updated: 1/22**

8

OBSERVING POLLINATORS
Identify and count pollinators as they visit flowering plants.

Events

Once you have established partnerships, consider hosting an event to support educating the community about citizen science or a specific research project. Use the following resources:

- **Review the Library and Community Guide to Citizen Science** (https://SciStarter.org/LibraryGuide) for case studies, and other ideas for events. Download the Programming Checklist and sample letters to help organize your event.

- **Complete the Libraries as Community Hubs for Citizen Science tutorial** (https://SciStarter.org/library-training). This is full of resources to help library staff plan, and provide citizen science activities to their community.

Observing Pollinators Program-in-a-Box

Host an Observing Pollinator's introductory event. Use the following slide presentation and speaker notes as is or edit to fit the needs of your event:

- Slides: https://bit.ly/3rlOMIq
- Speaker notes: https://bit.ly/36NWjpZ

Sustaining Engagement

Now that you've built kits, created a process to check them out, partnered with community-based organizations, and offered citizen science activities, you will need to continue educating library users about citizen science, and how their contributions can impact scientific research and answer questions.

To maintain the momentum, think about future programs where local experts would come and talk to your community about pollinators. Beekeepers, garden clubs, county extension master gardeners, and local biologists with bat or bird knowledge will help spur library users' curiosity, and desire to participate in the Great Sunflower Project.

SciStarter.org Curated Videos

SciStarter.org (https://bit.ly/3m3l62l) has curated videos with citizen science project leader interviews that can be used in a library program or linked from your library's website. Some libraries hold meetups on a regular basis to focus on a specific project or discuss other citizen science projects. This could be a great recurring event to do with your community-based organization partner.

OBSERVING POLLINATORS
Identify and count pollinators as they visit flowering plants.

SciStarter.org/Events

You've done all the footwork to plan an event, and now it's time to let everyone know about this awesome opportunity! Once you create a SciStarter.org account, you are able to post your events on https://SciStarter.org/events. Whether it's a face-to-face or virtual event, let people know your library is an event hub for citizen science.

The People Finder on SciStarter

The People Finder (https://SciStarter.org/people-finder) is a SciStarter tool that gives you the opportunity to message SciStarter account holders and project owners in your area. Reach out to this community to announce your upcoming citizen science events..

Citizen Science Month

This is a month-long celebration to feature citizen science in a way that meets your community's needs. The Library Guide, Section 4 has a step-by-step guide about Citizen Science Month for different participation levels and needs. There are tips to plan a virtual event using the many available SciStarter.org resources (https://CitizenScienceMonth.org).

SciStarter Affiliates

SciStarter Affiliate Projects (https://SciStarter.org/Affiliates), like the Great Sunflower Project, are citizen science projects that partner with SciStarter to credit your contributions in your SciStarter Dashboard. If you participate in a SciStarter Affiliate, the number and frequency of your contributions will be credited in your SciStarter Dashboard, usually within 24 hours (on average).